1: Karsten--107 (1916-18) 1935 Jivaro
116, 322, 412 (1928-29)

"Similarly, woodwork of every kind is a man's occupation. Various objects of Indian ergology reveal great technical skill, which is all the more admirable as the implements that the Indians have at their disposal are very primitive. Formerly, when the Indians did not yet know such iron instruments as the axe and the knife which are nowadays common among all tribes, their resources for making various wooden objects were of course still more limited. Their principal implements at that time were sharp snail's shells, axes or clubs of stone of the kind which are still found in some Indian huts or occasionally encountered in the earth in old Indian settlements, and a kind of knife of split bamboo, called shingyana.

"The making of a blowgun is said to require about two months and the work can only be done gradually. The chonta wood must be perfectly dry before the channel can be bored, otherwise there is always a danger of the wooden pieces warping, in which case the channel may become crooked and the whole weapon quite useless. Great care is considered particularly necessary when the channel is bored in the 'gun', which takes eight to ten days. It is especially prescribed that during these days the maker of the blowgun must not cohabit with his wife, lest the channel of the blowgun become crooked.

The dart (tsiraáka) is 25 to 27 cm. long and is carved of the hard and even wood of certain palms. The Jibaros told me five different palms from the wood of which the darts can be carved. The best of these is the ináyu palm. The wood of these palms, and especially of this last, is believed to possess certain 'poison' properties and therefore to be the proper material for poisoned arrows. The ináyu palm (Maximiliana regia) however is rare in the country of the Jibaros proper. On the other hand, it is quite common in the region of Canelos whence the Achuares on the Pastaza, for instance, obtain it by exchange."

34:Harner E.-4. 5 (1956-1969)1973 SD9 Jivaro SD9

tamed, both for personal amusement and for trade to the western or frontier Jívaro to obtain steel machetes, axe-heads, firearms, and ammunition.

Technology and Crafts

No single tool can be considered more ubiquitous in Jívaro life than the machete. The machete is the sole garden weeding implement as well as the only tool used for digging up root crops including the staple food, sweet manioc. It is used for woodworking, to dig clay for pottery, to prepare foods and to cut hair, and it is used to fell even the largest tree, although the less common steel axe is preferred for this task when it is available.

Machetes are of two types: the more plentiful *hapa mačit* ("deer machete"), of Ecuadorian manufacture, which was formerly obtained at Macas in exchange for one deer carcass, and the *kayetu mačit* (Collins machete), of North American manufacture and preferred by the Jívaro because of its superior efficiency. The *hapa mačit* was introduced first, the Collins implement not reaching the Jívaro until about 1941. During the past few decades, large single-bitted steel axe heads have also been introduced in significant numbers by means of a system of Jívaro trading partners. Such axes are still far less plentiful than machetes, but in great demand because of their superiority over machetes in felling trees. Iron adze blades, which were apparently introduced about the same time as machetes, are possessed by only a very few individuals, but are in demand for finishing canoes and stools. All the types of steel tools are mainly obtained by trade from the western or frontier Jívaro of the Río Upano Valley.

As machetes become worn through years of continual use

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and lose their handles, they are relegated to purely culinary tasks. The steel blades are so highly valued, however, that they continue to be used even when worn down to mere stubs. Such stubs are broken into small triangular pieces and then used as knives for whittling blowgun darts and for performing other small cutting jobs. Wooden objects made with the machete are characteristically simple but well made, although a few carved embellishments resembling reptile heads may be seen on the handles of stools and mortar boards, and on the tips of house posts and the prows of dugout canoes.

The machete is the basic tool used in manufacturing objects from bone and the shells of large land snails, the latter material being utilized primarily for women's dance belt rattles. Bone work is limited to making needles from monkey leg bones and carving gunpowder containers of cows' horns traded from the frontier Jivaro.

Non-ferrous cutting tools are nowadays only rarely employed. A sharp-edged strip of bamboo is used to cut the umbilicus of a new-born infant, and sometimes a hardwood weed-cutting "machete" is used in garden work when there is no steel one available. Otherwise steel tools dominate the processing of materials.

The tip of a machete or machete fragment serves as a boring tool, awls being unknown. Men sew the fringes of garments and make knotless netting bags with the aid of monkey bone needles. A few possess large steel needles for the same purposes. Women use bone or steel needles, or a fragment of a blowgun dart, to pin their dresses (*tsuali*) over one shoulder (see Plate 4).

Wooden mortar boards and pestles are utilized in mashing the fruit of the chonta palm to prepare a special beer, to mash peanuts, and to crush a mixture of salt and hot pepper (see Plate 7). The same wooden board is used with a crude rocker-